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FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT

50X1-HUM

CD NO.

COUNTRY USSR

DATE OF INFORMATION 1949

SUBJECT Scientific - Geophysics

HOW PUBLISHED Monthly periodical

DATE DIST. 17 Aug 1949

WHERE
PUBLISHED MOSCOW

NO. OF PAGES 3

DATE
PUBLISHED May 1949

SUPPLEMENT TO
REPORT NO.

LANGUAGE Russian

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SOURCE: Vestnik Akademii Nauk SSSR, No 5, 1949. (Information requested).

FIRST CONFERENCE ON METEORITES FIELD

E. L. Krinov

The first conference on meteorites was summoned by the meteorite committee of the Academy of Sciences USSR from 16 to 19 March in Moscow. Participating in the work of the conference were astronomers, mineralogists, petrographers, geophysicists, crystallographers, chemists, and others -- in accordance with the contemporary state of the science of meteorites. No longer prevalent today is the period of unrelated research on meteorites when chemists studied the chemical composition of meteorites, disregarding their mineralogical composition and structure; astronomers determined the path of the meteorites in the earth's atmosphere and beyond its limits, disregarding the circumstances of its fall, and without knowledge of the material in the meteorite itself; mineralogists and petrographers studied the meteorite structure without considering astrophysical data, etc. Now meteoritics leans heavily on complex utilization of methods in astronomy, petrography, mineralogy, chemistry, and a number of other sciences.

Many large scientific institutions of the country were represented at the conference: Pulkovo Astronomical Observatory, Astronomical Council of the Academy of Sciences USSR, Meteorite Committee of Academy of Sciences Ukrainian SSR, Leningrad State University, Astronomical Institute imeni Shternberg, Kiev Astronomical Observatory, Odessa Astronomical Observatory, Odessa State University, Arkhabad Astrophysical Laboratory of the Turkmen Branch of Academy of Sciences USSR, Stalinabad Astronomical Observatory, Institute of Astronomy and Physics of Academy of Sciences Kazakh SSR, Institute of Geochemical Problems of Academy of Sciences USSR, Institute of Terrestrial Magnetism, All-Union Astro-Geodetic Society and its Moscow branch, Volcanological Laboratory of Academy of Sciences USSR, Geophysics Institute of Academy of Sciences USSR Moscow Planetarium, and others.

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Also invited by the meteorite committee to participate in the work of the conference were representatives of a broad segment of the population of our country from among the numbers of observer members -- correspondents of the committee.

In all, 24 reports were heard. The chairman of the meteorite committee, Academician V. G. Fesenkov, presented a summary in which he characterized the development of meteoritics in our country during the Soviet period. He pointed out the basic problems and next undertakings in meteoritics, including the study of the conditions of fall of meteorites and thorough investigation of their composition.

A report by E. L. Krinov was dedicated to the 200th anniversary of the first discovery of a meteorite in our country -- Pallas iron. The meteorite was found in 1749 on the shores of the Yenisey River by the teacher and blacksmith Yakov Medvedev, the first prospector for the mineral resources of our country. Nevertheless, the name Medvedev was little known, and the discovery of the meteorite was connected with the name of Academician Pallas. In 1794, E. F. Khladniy, corresponding member of the Russian Academy of Sciences, published his book On the Origin of the Iron Discovered by Pallas and Other Similar Iron Masses in which he set forth the results of his study of Pallas iron, proving that it, as well as other masses similar to it, are meteorites and have a cosmic origin. As is known, in Western Europe these ideas were recognized after nearly 10 years, which attests to the priority of Russian science in establishing the cosmic nature of meteorites and in showing the possibility of their falling on the earth.

In his second report, Krinov examined the contemporary state of the problem concerning the study of the fall of the Tunguska meteorite, throwing light on the basic stages of the work and some of the results produced by the expedition, and indicating the tasks of further research on the conditions of fall of the meteorite.

The reports of Academician V. G. Fesenkov and scientific collaborator S. S. Fonton gave the preliminary results of investigations on the conditions of fall of the Sikhote-Alin meteorite in the Ussuri taiga in 1947.

K. P. Staryukovich, Doctor of Physicomathematical Science, in his report on the theory of formation of meteor craters showed under what conditions the Tunguska and Sikhote-Alin meteorites could have fallen.

The reports on these meteorites were accompanied by exhibitions of movie films taken by the expeditions; in addition, there was a special display of photographs, sketches, drawings, maps, etc., illustrating the circumstances of fall of both meteorites.

One day of the conference was devoted to a series of reports on meteoritic astronomy. The following reports were presented: Academician V. G. Fesenkov, and explosive meteor observed by him; N. I. Grishin, photographing meteors; O. A. Katasev, the processing of photographic prints of meteors and determination of their orbits; A. M. Bekhaver, telescopic meteors; V. L. Fedynskiy, Doctor of Physicomathematical Science, noctilucent clouds and the tracks of exploding meteors; B. Yu. Levin, Candidate of Physicomathematical Science, the physical theory of motion of meteoric bodies in the earth's atmosphere; I. S. Astapovich, Candidate of Physicomathematical Science, the physical properties of exploding meteors; D. P. Malyuga, Candidate of Chemical Science, the nature of the results of his investigations of tektites, glass formations, the nature of which remains unclear up to this time; S. V. Orlov, corresponding member of the Academy of Sciences USSR, showed in his report the close relation between asteroids and meteorites.

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A number of reports dealt with the investigation of the material composition and structure of meteorites: A. V. Trofimov, Candidate of Chemical Sciences, the isotope composition of meteorites; L. G. Kvasha, Candidate of Geologicomineralogical Sciences, the mineralogical composition and structure of meteorites of the Academy of Sciences' USSR collection; A. A. Yavnel', the microstructure of the Sikhote-Alin meteorite; D. L. Dreyzin and P. I. Sushitskiy, Candidate of Geologicogeographic Sciences, the fall and material composition of the stony meteoritic shower of Krymka which fell in 1946 in Odessa Oblast. In addition, a report on pallasites was given by P. N. Chirvinskiy.

The last day of the conference consisted of the following reports: Yu. M. Kushnir, the first results of the application of the electron microscope to the study of the microstructure of meteorites; R. L. Dreyzin, the role of the population in gathering meteorites and on propagandizing meteorites; and E. L. Erinov, the calculation and distribution of meteorites in the collections of the country. Information was also given by participants in the conference regarding local work.

The conference adopted a series of decisions concerning further work in meteorites (foremost, that of investigating the fall of the Tungusic and Sikhote-Alin meteorites), and also in meteoric-astronomy, in the study of the material composition of meteorites, and propaganda on meteorites. It was further deemed essential that a meteoritic museum with a number of laboratories for studying meteorites be created.

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